MAY'15 ISSUE

PARTICLE POST

COLLIDER-ACCELERATOR DEPARTMENT

PREVIOUS ISSUES
April 2015 GO

Contact: C. Hoffman

Quote of the Month: "Man is an artifact designed for space travel. He is not designed to remain in his present b any more than a tadpole is designed to remain a tadpole." - William S. Burroughs

A WORD FROM THE:

Administration

Accelerator Div.

ES&F Div.

Acc. R&D Div.

Operations

Arrivals/Departures

Safety Stats

NOTE FROM OUR CHAIR: Thomas Roser

The 100 GeV on 100 GeV polarized proton run ended very successfully with new record peak and integrated luminosity. After a very short switch-over time, where a number of superconducting magnets were physically moved, the first run of colliding polarized protons with gold beams is under way.

The deliberations of the Nuclear Physics Long Range Planning Working Group are in their final stages. The report might be presented to the Nuclear Science Advisory Committee (NSAC) as early as July. We are optimistic that it will contain the recommendation to build an Electron Ion Collider as the next Nuclear Physics facility after the FRIB construction at Michigan State University is completed. We now need to prepare our proposal for an Electron Ion Collider, eRHIC, so that it will be the winning proposal. The eRHIC design takes advantage of the existing RHIC facility and adds a highly innovative energy recovery superconducting linac for the electron accelerator. This design promises exceptional performance as well as cost effectiveness, but also presents very significant technical risks. We are holding an eRHIC R&D retreat this month to start the process of developing a plan on how to best address the technical risks of the eRHIC design.

VIEW CONFERENCE PROJECTIONS FOR 2015: DUE ASAP -
CONFERENCES SHOULD BE PROJECTED THROUGH DECEMBER 2015

DID YOU KNOW??

Check out who received an employee Service Award this year! Collider-Accelerator Dept. employees who received a *Service Award*.

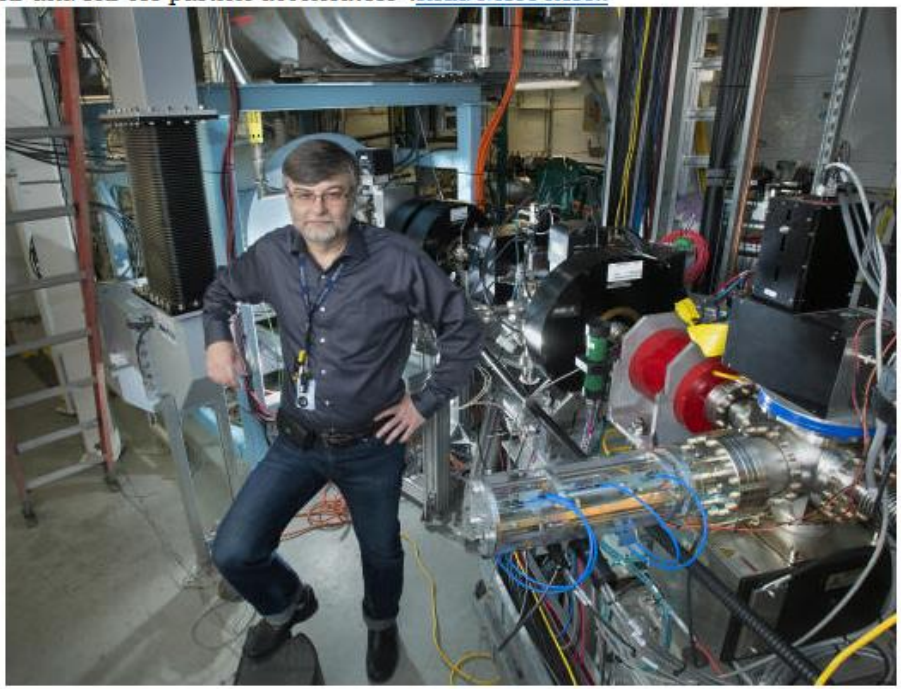
Check out who received an employee Spotlight Award this year!

! ARC Flash Alert; Description of Los Alamos Event

EVENTS/SEMINARS...

Check out the *BNL Calendar* for upcoming events & Seminars or the *Upcoming Conferences & Workshops* page for workshops and Conferences happening at BNL.

Congratulations goes out to Sergey Belomestnykh for receiving the IEEE NPSS Particle Accelerator Science and Technology Award for 2015 !~ "for achievements in the science and technology of RF and SRF for particle accelerators". *Read More here..*



Steve Bellevia captured a few galaxy photos *on the night of April 11th & 15th* - See the pictures **here.**

Spring has arrived and summer is following close behind! Look at these beautiful pictures P.K. Feng has taken of our trees in the courtyard

May 14- (Bldg 510 - SSR | 3pm) Particle Physics Seminar "Dark Matter Search Results from the PandaX-I Experiment" Presented by Mengjiao Xiao, Changhai Jiao Tong U.

May 14 - (Bldg 911B - LCR | 4pm) C-AD Accelerator Physics Seminar

May 19 - (Bldg 510 - SSR | 11am) Nuclear Physics Seminar "Low pT Production at Confinement: The Missing Piece to the Direct Photon Puzzle" Presented by Dr. Sarah Campbell, Columbia U.

May 19 & 26 - (Bldg 490 - CR A/B | 12pm) Health Promotion Program Lecture "Weight Watchers"

May 28 - (Berkener Hall RmB | 12pm) Social Security Maximization Planning

June 9 -11 - (Bldg 555 - HSR | 9am) Annual Users' Meeting

Do you have to give a talk?

Public Speaking Techniques:

Verbal & Non-verbal

Theodore Sampieri Ext: 4894

12:00 – 1:00 Fridays

CAD Building 911
Large Conference Room: 2nd Floor

IN OTHER NEWS...

UPDATE 1~U.S. Approves Shell's plan to drill for oil in Artic ~ Royal Dutch Shell's return to oil drilling in the U.S. Artic for the first time since 2012 took a big step forward on Monday when the Obama administration approved the company's exploration plan. ... Continue reading

Picasso Sells for $179.4 M~ An all time record for a work at Auction ...read about it.

NOTE FROM OUR ADMINISTRATION: S. LaMontagne

Vehicle Replacements:

The Laboratory has entered into an agreement with GSA to transition to their Vehicle Leasing Program. Initially, GSA will provide the Laboratory with about 145 new vehicles to replace. The balance of the fleet will be replaced on a scheduled basis. Fleet Management will be scheduling Informational Forums in May to provide additional insight in the GSA Leasing Program, describe our collective Roles and Responsibilities under this Program and answer questions. Ann Lamberti, assisted by Steve Bubka, is responsible for oversight of C-AD's fleet.

Annual Asset Validation:

Each year, employees are asked to review the list of assets, i.e. bar-coded equipment assigned to them and to acknowledge that the assets are in their possession and that the information listed for each asset is correct. This process, once manual, is now automated. Using the link provided in the system generated request, please take the opportunity to complete the annual asset validation process. While the automated validation is not required if you provided a manual validation earlier this year, it would be helpful to staff responsible for confirming organizational compliance if you also validate your asset list in PeopleSoft.

Annual Special Process Spares Inventory:

The annual inventory of Special Process Spares will commence shortly. Special process spares are by definition unique to the facility, vital to ensure continuity of operations and require a long lead-time to manufacture and deliver. The RHIC spares inventory is an active inventory of ~500 items valued at ~$14M. The status of each spare must be confirmed annually and payment processed for any spare put into service since the completion of the prior year's inventory. Paul Sparrow is responsible for maintaining the SPS inventory records. If you have special process spares for which you are responsible, you will receive a request in May to confirm the status of the spares. Please make every effort to respond as soon as possible.

NOTE FROM OPERATIONS: Paul Sampson

The RHIC Polarized Proton Run successfully concluded on April 27th. At that time, the changeover to the Polarized proton run was executed. This preparation included moving cold RHIC "DX", vacuum chambers and devices on either side of the 6, 8, 10 and 12 o'clock IR's. This was successfully completed during an extended maintenance period on Monday the 27th. Also during this period, some major Maintenance and installation projects were completed including installation of the test 9MHz cavity the 4 o'clock tunnel area, CeC installation and Siemens Motor Generator bearing modification. All of these tasks were completed and setup with beam began early April 28th. After a very successful startup, Physics stores began May 3rd and optimization is ongoing.

Stochastic cooling for the gold beam was set up and will be on routinely for the p-Au run.

LINAC continues to run very well providing beams for the Booster and BLIP. NSRL run 15A will conclude and 15B commence in May. Various beams and energies are being delivered from the Booster for NSRL users.

Maintenance periods are presently being held on a bi-weekly schedule, alternating with APEX.

The "RHIC Broadcast" link displays the latest schedules for testing, power disruptions, outages and daily schedules.

To view a list of approved work for the next maintenance or to review past results, go the Job Request System and select the appropriate date. This link is behind the firewall and requires privileges to view.

For weekly schedule updates see: This Week, which can be viewed by all.

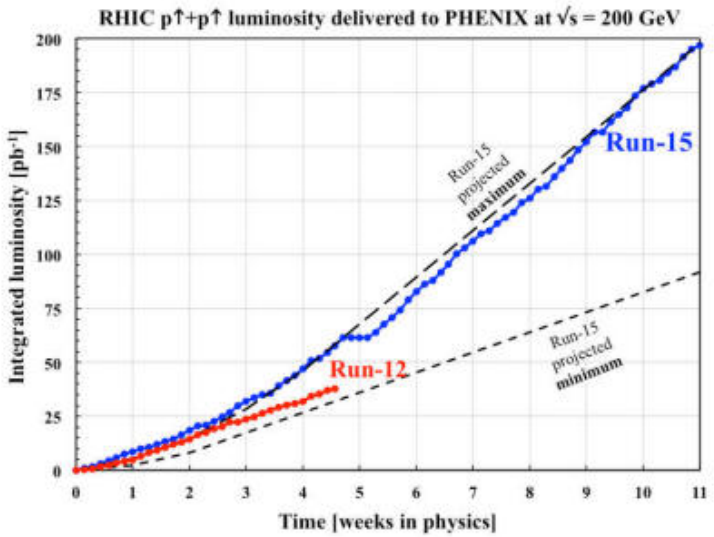
NOTE FROM ACCELERATOR R&D DIVISION: Ilan Ben-Zvi

No input at this time...

NOTE FROM OUR ACCELERATOR DIVISION: Wolfram Fischer

The 100 GeV polarized proton run came to an end on 27 May 2015. Vincent Schoefer, the Run Coordinator, did an outstanding job delivering luminosity at more than twice the 2012 rate, the last time we ran 100 GeV polarized protons (see Figure). We managed to reach the maximum projected luminosity despite the 3-day interruption in mid March. At that time we lost power for a few hours after breaker opened. 2/3 of the liquid helium inventory evaporated and had to be liquefied again. Despite our best efforts the polarization is about the same as in 2012. The higher luminosity is due to more intense beams from the injectors, and a new beam-beam compensation scheme in RHIC consisting of a new lattice and the first operational use of the electron lenses.

On 27 April 2015 Chuyu Liu took over as Run Coordinator for the p+Au part. On that day the DX magnets in IR6, 8, 10 and 12 were moved so that both beams can be accelerated and stored. The setup with beam took only 6 days, and Sunday evening the first store for physics was filled. Since 6 May 2015 we also have stochastic cooling for the Au beam, and are now in the process of ramping up the luminosity.



The catalog of all Technical Notes is http://www.rhichome.bnl.gov/AGS/InternalReports.html, and it is linked from both the Department and Accelerator Division home pages.

NOTE FROM OUR EXPERIMENTAL SUPPORT & FACILITIES DIVISION: Phil Pile

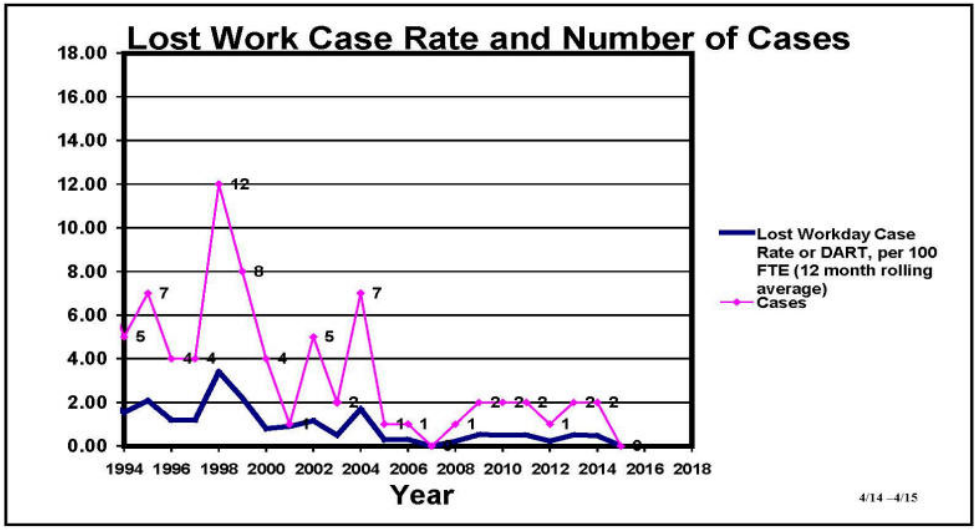
We are now about 80% of our way through RHIC Run15. The 11 week 100 x 100 GeV polarized proton run was completed on 27 April. Luminosity delivered to the experiments was at the maximum projection by the end of the run. The polarization was, however, a bit below expectations (~55% delivered vs 60% expectation). For the most part, however, the experiments exceeded their goals. The exception for the STAR experiment was their jets/high p_T trigger with longitudal polarization (the figure of merit goes as polarization to the fourth power) where 60% of their goal was reached. Similarly for PHENIX, they exceeded their luminosity goals but were a little over 20% short of their transverse polarized (the figure of merit goes as polarization squared) MPC-EX goal. The MPC-EX was a new detector system for PHENIX commissioned during the run. We are now in the physics mode for ~100 GeV polarized protons colliding with a 100 GeV/n gold beam, a new beam combination for RHIC that required DX magnets to be physically moved (cm's) to reduce aperture constraints. We allocated 11 days to make the transition from pp running to physics in this new asymmetric running mode. The actual time required was just a week, a testament to careful planning. As of today the stochastic cooling is operational in the longitudal and one transverse plane and with this we expect the luminosity to be well within the bounds of our minimum and maximum projections, shading towards the maximum. We still have to do a vernier scans of the beams to calibrate the luminosity measuring detectors so the jury is still out as to exactly how well we are doing. We still plan to switch to protons on aluminum once experiment goals are reached for proton gold running. The expectation at this time is we will have at least 8 days of physics with pAl. The end of physics running is holding at 19 June.

sPHENIX update – Room temperature tests (vacuum, hypot, impulse, pressure etc) are complete on the BaBAR superconducting solenoid with no problems found. The collaboration underwent a DOE Science Review at the end of April. Tim Hallman read a summary of comments from the review panel. The comments were all extremely positive and the committee found the science case for sPHENIX "compelling". This was a very important step in the evolution of this project. Next up will be an internal cost and schedule review that will come early this fall. This last review, if all goes well, should eventually lead to a formal endorsement by DOE. Our present plan is to begin the removal of PHENIX after we complete RHIC Run 16.

The BLIP run is proceeding on schedule. This week is a Sr-82 processing week (BLIP batch #5) with a delivery of Sr-82 to GE Healthcare this Friday. Production of Sr-82 for customers is at record levels with the Linac available beam intensity above the comfort zone for BLIP target survival – a good problem we handle by imposing an administrative limit on the beam intensity! Next year the new BLIP Raster system will be operational and with that we will be able to remove the administrative current limit and make even more Sr-82. R&D irradiations in April included tungsten, zinc and scandium targets. The scandium target gave us trouble – the copper window on the target blew away from the target resulting in a loss of the target. We are still investigating the incident but the culprit seems to point to simple overheating of the scandium and a less than robust copper window. A new design is in the works and we will try again later. The next thorium irradiation is scheduled for 4 June for 10 days in beam. As before, the target will be shipped to ORNL for processing (harvesting actinium). The process to separate beryllium form the BLIP cooling water is about ready so we should be able to fill the beryllium-7 order (ORNL) by the end of this month. BLIP will continue operations through July.

The NSRL run (NSRL 15A) continues. The run is scheduled to end on 10 May and after about a week break continue as NSRL 15B and run through 30 June. In addition to the usual Radiobiology related experiments NSRL beams have been made available to other customers (paying customers!). The experimenters so far include AMS/Ting, Lockheed Martin and a Technology Maturation Grant. Experiments to come include "Thick Target" experiment (NASA-Langley) and two more Lockheed Martin experiments.

SAFETY STATS: Peter Cirnigliaro



C-AD Occupational Injury Statistics

	For Year 2014	For Year* 2015
First Aid Cases	8	3
Recordable Cases	3	1
Lost Work Cases	1	0

* Calendar Year through 4/15

PHOTOS BY: STEVE BELLAVIA

"The Leo Trio" Mattituck, NY, April 11-12, 2015, 11:00 PM to 2:00 AM EDT.

The Needle Galaxy - Southold, NY, April 15th, 2015, 9:30PM to 11:30PM EDT

The Whale Galaxy, The "pup" and the Hockey Stick - Southold, NY, April 15-16, 2015, 11:30PM to 1:20AM EDT